NC/QC/DD/2020-21/PK-C1 Date: 27-05-2020

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).

{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**164 min**	Shall not be less than 30 min
2	Final setting time	**265min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**2.14 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**2.08 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.76 N/Sq mm**	Shall not be less than 27 N/Sqmm

Page No. 1/1,

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NC/QC/DD/2020-21/PK-PCC1

Date: 27-05-2020

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	100.00	85-100	90 – 100
20mm	67.25	0 -20	30- 70
10mm	32.80	0 -5	10- 35
4.75mm	4.15	------	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	96.45	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	83.10	60-95	75-100	85-100	
01.18	76.15	30-70	55-90	75-100	
600.mic	48.25	15-34	35-59	60-79	
300.mic	23.60	5-20	8-30	12-40	
150.mic	8.05	0-10	0-10	0-10	

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NC/QC/DD/2020-21/PK-C2 Date: 30-05-2020

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**152 min**	Shall not be less than 30 min
2	Final setting time	**275 min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**1.86 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**1.94 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.54 N/Sq mm**	Shall not be less than 27 N/Sqmm

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NC/QC/DD/2020-21/PK-FA1

Date: 30-05-2020

1. TESTING OF FINE AGGREGATES :

Sub: Testing of Fine Aggregates.
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size,mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -II	
04.75	**98.45**	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	**83.15**	60-95	75-100	85-100	
01.18	**76.50**	30-70	55-90	75-100	
600. mic	**48.90**	15.34	35-59	60-79	
300.mic	**24.50**	5-20	8-30	12-40	
150.mic	**8.10**	0-10	0-10	0-10	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2002)
1	Bulking of Sand	001	**17.61 %**	-----
2	Silt Content	----	**0.59%**	Not more than 8%
3	Specific Gravity	----	**2.61**	-------

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NC/QC/DD/2020-21/PK-CA1 Date: 30-05-2020

1. TESTING OF COARSE AGGREGATES (20 mm):

Sub: Testing of Construction Materials.
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	20 mm Sample	Single size	Graded
40 mm	**100.00**	100.00	100.00
20 mm	**96.35**	85-100	90 - 100
10 mm	**47.80**	0 - 20	25 - 55
4.75 mm	**4.05**	0 - 5	0 - 10

TABLE 1.2 :

SL No	Test conducted	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1.	Flakiness Index	**26.56 %**	Not to exceed 25 %
2.	Crushing value	**28.76 %**	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

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NC/QC/DD/2020-21/PK-S1 **Date: 30-05-2020**

1. TEST REPORT ON REINFORCEMENT STEEL:

Sub: Testing of Reinforcement Steel of diameter 10 and 12 mm **TMT Steel.**
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE – 1

SL No	Details	For 10 mm		For 12 mm	
		Test Results	Min Req. as per IS 1786-2008	**Test Results**	Min Req. as per IS 1786-2008
01	Observed diameter of bar	**10.0 mm**	10.0 mm	**12.0 mm**	12.0 mm
02	Observed Wt/m Length **Kg/m**	**0.622**	0.567	**0.892**	0.834
03	Proof stress/Yield stress, fy , **N/mm^2**	**556.0**	500.0	**556.0**	500.0
04	Bend/ Re bend Test	**Ok**	---	**Ok**	---
05	Percentage of Elongation, %	**19.70**	16.00	**21.40**	16.00
06	Ultimate Tensile Strength **N/mm^2**	**646.0**	565.0	**641.0**	565.0

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NC/QC/DD/2020-21/PK-CB1 **Date: 11-06-2020**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	04-06-20	11-06-20	07	22500	370	16.44	**16.67**
	002	"	"	"	"	380	16.89	
	003	"	"	"	"	375	16.67	

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NC/QC/DD/2020-21/PK-CB1A **Date: 02-07-2020**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	04-06-20	02-07-20	28	22500	505	22.44	**22.59**
	002	"	"	"	"	520	23.11	
	003	"	"	"	"	500	22.22	

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NC/QC/DD/2020-21/PK-W1 Date: 19-06-2020

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	**100.00**	100
45.00	**97.45**	95-100
26.50	**---**	-
22.40	**71.05**	60-80
11.20	**45.80**	40-60
4.75	**31.25**	25-40
2.36	**23.50**	15-30
0.600	**16.70**	8-22
0.075	**3.45**	0-5

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TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)–1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**25.70 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.16 %**	Not more than 35.0 %
3.	Water absorption, %	**0.42 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

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NC/QC/DD/2020-21/PK-W2 Date: 22-06-2020

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements to Roads And Drains At PK's Mustering Center Surrounding Area In Ward No.13 Shettyhalli Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Shetyhalli Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	**100.00**	100
45.00	**96.35**	95-100
26.50	---	-
22.40	**76.25**	60-80
11.20	**45.80**	40-60
4.75	**31.05**	25-40
2.36	**24.55**	15-30
0.600	**17.90**	8-22
0.075	**4.10**	0-5

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